REMARKS

Claims 101-105, 107-112 and 123-130 are pending in this application. By this Amendment, claims 101-105, 107-112 and 123 are amended, claims 116-120 are cancelled, and claims 124-130 are added. No new matter is added. Applicants reserve the right to file a continuing application to pursue the subject matter of withdrawn, non-elected claims 116-120.

I. The Claims Are Patentable Over The Applied References

The Office Action (1) rejects claims 101-104 and 123 under 35 U.S.C. §103(a) over U.S. Patent No. 5,972,419 to Roitman in view of U.S. Patent No. 5,874,200 to Ra et al. (Ra); (2) rejects claims 105 and 107-111 under 35 U.S.C. §103(a) over Roitman in view of Japanese Patent Publication No. 07-153574 to Kaneko and U.S. Patent No. 5,705,302 to Ohno et al. (Ohno); and (3) rejects claim 112 under 35 U.S.C. §103(a) over Roitman in view of Kaneko and Ohno, and further in view of Ra. The Office Action cites to the July 30, 2007 Office Action (Applicants believe the Office Action intended to reference the January 23, 2008 Office Action) for the text of the rejections. Applicants respectfully traverse the rejections.

A. Roitman In View Of Ra

Regarding independent claims 101 and 103, the applied references fail to disclose "enhancing a liquid repellency of an upper surface of the solid insulating layer" (or "insulating layer" for claim 103). Regarding dependent claim 102, the applied references fail to disclose "enhancing the liquid repellency at the upper surface of the solid insulating layer is performed by one of an ultraviolet ray radiation and an irradiation of plasma" (emphasis added).

Roitman discloses a method of making a passive matrix-type display that includes the steps of forming a mask 131 that defines the locations of pixels on a bottom electrode 132

(Fig. 2; col. 3, lines 29-33); and depositing droplets 138 in the wells in mask 131. Droplets 138 are an electroluminescent material (col. 3, lines 41-43).

Regarding independent claims 101 and 103, the January 23 Office Action acknowledges that Roitman fails to disclose the feature quoted above. However, the January 23 Office Action alleges that Roitman discloses, as an alternative embodiment to using mask 131 to contain the electroluminescent materials, using "hydrophilic or hydrophobic regions so that the droplets 138 are confined by surface tension" (col. 4, lines 55-59). The January 23 Office Action alleges that it would have been obvious to combine mask 131 and the use of hydrophilic and hydrophobic regions to further ensure the confinement of the droplets 138.

One of ordinary skill in the art would not have modified Roitman as proposed by the January 23 Office Action. Roitman discloses one embodiment where mask 131 is retained in the finished display 100 (Fig. 1). In this case, causing the mask 131 to be repellent to liquids likely would be detrimental in the formation of electron transport layer 106 over the mask 131. Further, Roitman does not disclose that there is a problem with mask 131 containing the electroluminescent materials deposited as droplets 138. Similarly, one of ordinary skill in the art would recognize that mask 131, as a physical barrier, would have no difficulty containing the droplets 138 because gravity would ensure that the electroluminescent material would not exit from the regions between the walls of mask 131. Thus, it is clear why Roitman discloses the use of hydrophilic and hydrophobic regions as an alternative to the use of mask 131. For these reasons, one of ordinary skill in the art, taking the applied references as a whole, would have no reason to modify mask 131 to be hydrophobic because, as taught by the applied references, this would provide no additional benefit over mask 131 as taught by Roitman, while adding the detriments of extra cost, extra manufacturing steps, extra time of manufacture, and extra complexity.

Regarding dependent claim 102, the January 23 Office Action acknowledges that Roitman fails to disclose enhancing a liquid repellency, but cites to Ra as disclosing that UV radiation reduces the hydrophobicity of the resist pattern 114 (January 23 Office Action, page 4, citing Ra at col. 3, line 57 to col. 4, line 17). However, claim 102 recites "enhancing a liquid repellency [hydrophobicity]" (emphasis and comment added), not reducing it. Thus, Ra fails to disclose the claimed feature.

Regarding independent claim 123, the applied references fail to disclose (1) a "method of manufacturing an active matrix type electro-luminescent device" (emphasis added); and (2) "a first liquid repellency of an inner wall of the insulating layer to a liquid or a liquid material being lower than a second liquid repellency of an upper surface of the insulating layer" (emphasis added).

Regarding feature (1) quoted above, Roitman fails to disclose manufacturing an active matrix type display because Roitman discloses a passive matrix type display.

Regarding feature (2) quoted above, the January 23 Office Action alleges that, if the step of UV radiation of Ra is applied to Roitman before the patterning step of Roitman, the claimed features are met. However, as discussed above, Ra discloses that UV radiation reduces hydrophobicity (Ra, col. 4, lines 4-17). Thus, under the January 23 Office Action's alleged combination, one of ordinary skill in the art would have been taught the opposite of feature (2) quoted above.

For the foregoing reasons, Applicants request withdrawal of the rejections of claims 101-104 and 123.

B. Roitman In View Of Kaneko And Ohno

Regarding independent claims 105 and 110, the applied references fail to disclose (1) "enhancing an affinity to liquid of the first electrode at the predetermined position relative to an affinity to liquid of the insulating layer, the affinity to liquid being enhanced with respect

to the liquid solution" (emphasis added), and (2) a "method of manufacturing an active matrix type electro-luminescent device" (emphasis added).

Regarding feature (1) quoted above, the January 23 Office Action acknowledges that Roitman fails to disclose a plurality of first electrodes, but cites to Kaneko as disclosing holes 14 in shadow mask layer 13 (Fig. 3; paragraph [0011]). The January 23 Office Action further acknowledges that Roitman fails to disclose feature (1) quoted above, but notes that Roitman teaches the use of hydrophilic and hydrophobic regions in one embodiment and the use of mask 131 in a second embodiment, and alleges that these embodiments are combinable, similar to what is alleged in relation to claims 101 and 103.

However, as discussed in relation to claims 101 and 103, one of ordinary skill in the art would not have modified Roitman as proposed by the January 23 Office Action because (i) in the embodiment where mask 131 is retained in the finished display 100 (Fig. 1), causing the mask 131 to be repellent to liquids likely would be detrimental in the formation of electron transport layer 106 over the mask 131; (ii) Roitman does not disclose that there is a problem with mask 131 containing the electroluminescent materials deposited as droplets 138; and (iii) one of ordinary skill in the art would recognize that mask 131, as a physical barrier, would have no difficulty containing the droplets 138 because gravity would ensure that the electroluminescent material would not exit from the regions between the walls of mask 131. Thus, it is clear why Roitman discloses the use of hydrophilic and hydrophobic regions as an alternative to the use of mask 131. For these reasons, one of ordinary skill in the art, taking the applied references as a whole, would have had no reason to modify mask 131 to be hydrophobic because, as taught by the applied reference, this modification would provide no benefit over mask 131 taught by Roitman, while adding the detriments of extra cost, extra manufacturing steps, extra time of manufacture, and extra complexity.

The January 23 Office Action further acknowledges that Roitman fails to disclose the

step of enhancing the wettability (affinity to liquid) of the first electrode, but cites to Ohno as disclosing use of RF plasma and UV radiation to produce a hydrophobic surface on base transparent conductive particles. Ohno discloses that transparent conductive particles with hydrophobic surfaces are used in color layer 14 (Fig. 1; col. 10, lines 48-50).

However, one of ordinary skill in the art would not have modified Roitman and Kaneko as proposed by the January 23 Office Action because Roitman does not disclose a color layer. Further, even if the proposed modification of Roitman and Kaneko with Ohno would be made, it would result in the display 100 of Roitman, utilizing the shadow mask layer 13 of Kaneko and the color layer 14 of Ohno. This combination fails to disclose the feature of a first electrode having an enhanced affinity to liquid as claimed.

Regarding feature (2) quoted above, the applied references fail to disclose manufacturing an active matrix type display because both Roitman and Kaneko disclose passive matrix type displays.

For the foregoing reasons, Applicants request withdrawal of the rejections of claims 105 and 107-112.

II. New Claims 124-130

Claims 124-130 are patentable for the same reasons as their base claims 101, 103, 105, 110 and 123.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

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Attachment:
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